

Claims

1. Device for singulating vertically positioned flat mailings from a stack of mail (2),

- 5 - comprising an input area (1), a transport section (12) and at least one singulating stage (14) located adjacent to the transport section (12) and downstream relative to the direction of travel of the mailings,
- 10 - wherein in the input area (1) the stack of mail (2), aligned in relation to a supporting element (4), stands on underfloor belts (3) and is held by at least one stack support (5,5a), and the underfloor belts (3) and the stack supports (5,5a) transport the stack of mail (2) to the transport section (12),
- 15 - wherein the transport section (12) comprises at least two discharge rockers (7a,7b) disposed on top of one another with discharge belts revolving in a driven manner, second discharge belts (13) revolving in a driven manner that are arranged in a fixed manner adjacent thereto and downstream thereof, as well as a driven underfloor belt (10) assigned to the discharge rockers (7a,7b) and to the second discharge belts (13),
- 20 - wherein the point of rotation of the discharge rockers (7a,7b) is pressed by means of spring force against the stack of mail (2),
- wherein a distance sensor (8a,8b) is assigned to each discharge rocker (7a,7b), said distance sensor emitting a drive start signal when there is a defined stack pressure on the respective discharge rocker (7a,7b),
- 25 - wherein the singulating stage (14) comprises further discharge belts revolving in a driven manner whose speed of travel is higher than the speed of travel of the second discharge belts (13),
- wherein the supporting element (4) ends at a defined distance upstream of the undeflected discharge rockers (7a,7b),
- wherein a flexible, elongated retaining element (19) is disposed, said retaining element being arranged in a resiliently pressed manner from the end of the supporting element (4) to the beginning of the second discharge belts (13) and further on to said discharge belts (13) and to the discharge belts of the singulating stage (14),
- 30 - wherein the distance (12a) of the supporting element (4) from the downstream end of the second discharge belts (13) relative to the direction of travel is greater than the maximum permissible length of a mailing,

- and wherein the control of the drives of the transport section (12) and of the singulating stage (14) is fashioned such that
- at the defined stack pressure on the discharge rockers (7a,7b) all the drives of the transport section (12) and of the singulating stage (14) are started,
- 5 - the drives of the transport section (12) are stopped again or are reduced in speed as soon as a mailing held by the discharge belts of the singulating stage (14) has their speed of travel,
- and the drives of the transport section (12) are restarted or switched to their normal discharge speed when a gap before the subsequent mailing is detected by means of a
- 10 light barrier line (18) disposed along the path of travel.

2. Device according to claim 1, characterized in that low-pressure chambers (30,31) are disposed behind the second discharge belts (13) and the discharge belts of the further singulating stages (14), said low-pressure chambers pulling the mailings on to the discharge belts

15 during travel.

3. Device according to claim 2, characterized in that the low pressure of the low-pressure chambers (30) of the second discharge belts (13) is less than the low pressure of the low-pressure chambers (31) of the singulating stage (14) located downstream.

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4. Device according to claim 1, characterized in that stationary scanning rollers or belts (20) running on the mailings are provided for determining the mailing speeds.

5. Device according to claim 1, characterized in that an uprighting device (9) with

25 controllably driven friction belts (6) is disposed between the underfloor belts (3) of the input area (1) and the underfloor belt (10) running along the path of travel, said friction belts being drivable such that, when a tilt in the leading part of the mailing stack (2) is identified by means of deflection of the discharge rockers (7a,7b), the leading part of the mailing stack (2) is uprighted.

6. Device according to claim 1, characterized in that a metal sensor (35) for detecting staples is disposed at the transition between discharge rockers (7a,7b) and second discharge belts (13), said metal sensor (35) emitting, when a staple is detected, a signal to the drive con-

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trol which responds thereto by reducing the discharge speeds and accelerations until the mailing with the staple has left the singulating device including all singulating stages (14).

7. Device according to claim 1, characterized in that the speed of travel of the underfloor belt (10) is lower than that of the discharge belts of the discharge rockers (7a,7b).

8. Device according to claim 1, characterized in that the point of rotation of the discharge rockers (7a,7b) is located at their downstream end on the drive axis.